

Data sheet

Automatic balancing valve ASV-P (DN 15-40)

Description



ASV-P valves are automatic balancing valves with fixed setting (10 kPa) for creating optimal hydronic balance in residential heating systems.

The setting can be increased to 20 or 30 kPa by spring replacement. Spring can be replaced under pressure.

ASV balancing valves are designed to guarantee high quality of the automatic balancing by:

- a pressure released cone,
- an adapted membrane for every valve dimension which provide constant quality performance for all sizes.

A 90° angle between all service features (shut-off, draining, measuring) allows an easy access under any installing condition.

ASV valves (DN 15-40) are packaged in styropore (EPS) which can be used for insulation at temperatures up to 80 °C. An insulation cap is available as an accessory for insulation at higher temperatures (up to 120 °C).

ASV-P valves are to be mounted in return pipe, in combination with partner valves mounted in flow pipe. As a partner valve ASV-M/I/BD are recommended.

Ordering

ASV-P balancing valve, inclusive in the box: 1.5 m impulse tube (G 1/16 A) and drain cock (G 3/4 A)
Constant differential pressure 10 kPa ; **can be upgraded to 20 or 30 kPa setting respectively**

Type	DN	k _{v5} (m ³ /h)	Internal thread (ISO 7/1)	Code No.	Type	External thread (ISO 228/1)	Code No.
	15	1.6	Rp 1/2	003L7621		G 3/4 A	003L7626
	20	2.5	Rp 3/4	003L7622		G 1 A	003L7627
	25	4.0	Rp 1	003L7623		G 1 1/4 A	003L7628
	32	6.3	Rp 1 1/4	003L7624		G 1 1/2 A	003L7629
	40	10	Rp 1 1/2	003L7625		G 1 3/4 A	003L7630

Note: for whole range of ASV partner valves, spare parts and accessories please refer to ASV datasheet.

Accessories and spare parts

Type	Description	Comments/connection	Code No.
	Impulse tube, with O-rings	1.5 m	003L8152
		2.5 m	003Z0690
		5 m	003L8153
	ASV-P 20 kPa spring (yellow)	DN 15	003L8182
		DN 20	003L8183
		DN 25	003L8184
		DN 32 / DN 40	003L8185
	ASV-P 30 kPa spring (green)	DN 15	003L8192
		DN 20	003L8193
		DN 25	003L8194
		DN 32 / DN 40	003L8195

Technical data

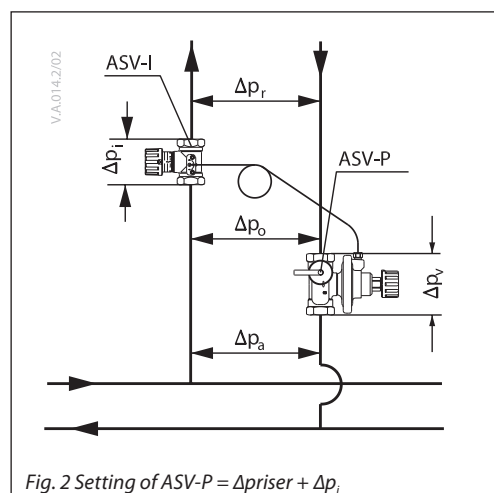
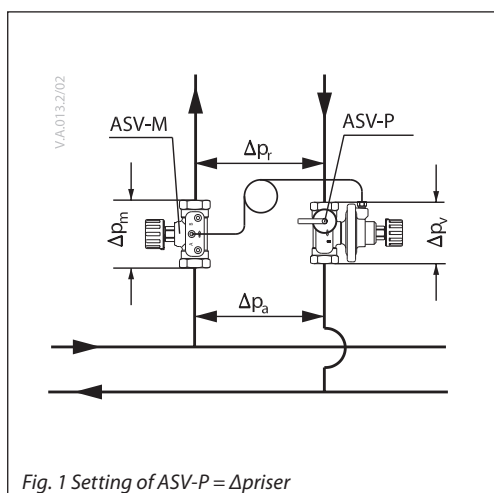
Nominal diameter	DN	15-40
Max. pressure	bar	16 (PN 16)
Test pressure		25
Differential pressure over the valve	kPa	10-150 ¹⁾
Temperature	°C	-20 ... 120
Material of parts in contact with water		
Valve body		Brass
Cone ASV-P		DZR brass
Membrane / O-rings		EPDM
Spring		Stainless steel

¹⁾ Please note that the maximum admissible differential pressure across the valve 150 kPa should also not be exceeded at partial load.

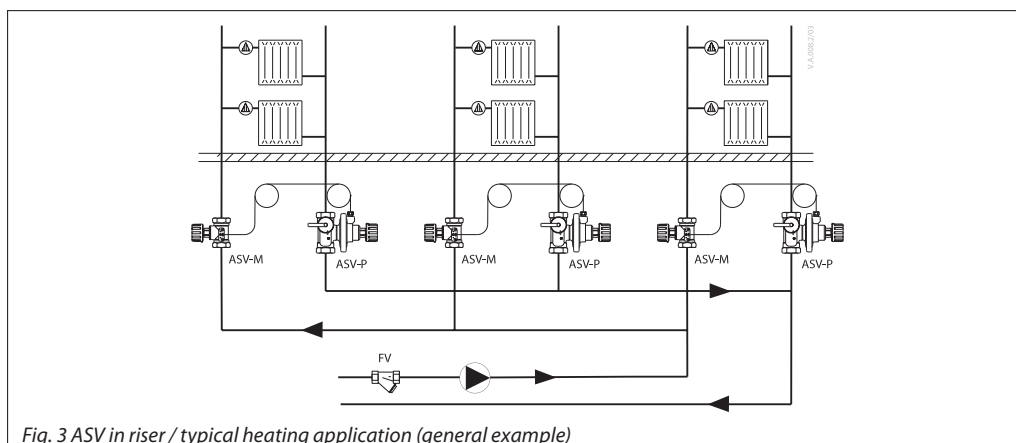
Application

There are two basic configurations when using ASV partner valves (ASV-BD, ASV-I, ASV-M, MSV-F2):

- partner valve outside the control loop (Fig. 1). Recommended configuration: it results in best performance since whole controlled pressure range is available to the riser. Flow limitation is done on each terminal unit in the riser (for example, RA-N with presetting on radiator, etc).
- partner valve inside control loop (Fig. 2). Offers flow limitation on the riser however part of the controlled pressure range is used by pressure drop on partner valve (Δp_v). It is recommended when flow limitation on each terminal units is not possible.

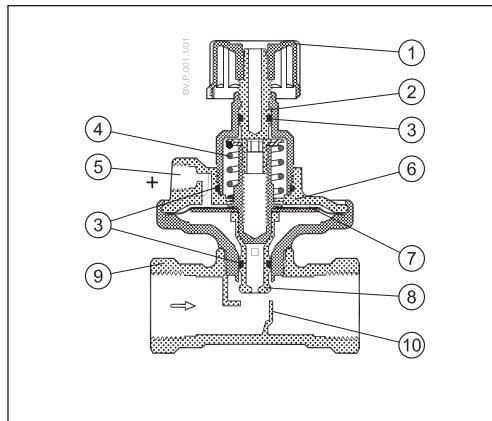


ASV-BD can be used outside or inside control loop by choice of which measuring nipple is open. To be used outside control loop, blue measuring nipple needs to be open. In this position, flow verification can be done (default position). To be used inside control loop, red measuring nipple needs to be open. In this position, flow verification & flow verification can be done.



Design

1. Shut-off knob
2. Shut-off spindle
3. O-ring
4. Reference spring
5. Impulse tube connection
6. Diaphragm element
7. Control diaphragm
8. Pressure-relieved valve cone
9. Valve body
10. Seat



The ASV-P is designed to maintain constant differential pressure across a riser. Via an internal connection and together with the reference spring, pressure in the return pipe acts on the underside of the control diaphragm (7) while via an impulse tube (5), pressure in the flow pipe acts on the top of the diaphragm. In this way the balancing valve maintains a fixed differential pressure of 10 kPa.

The setting can be increased to 20 or 30 kPa by spring replacement. Spring can be replaced under pressure. The ability to increase the setting is especially useful in case of trouble shooting. It gives insurance that design flow can be achieved even if calculation doesn't match actual installation.

Dimensions - insulation

ASV-P must be installed in the return pipe with flow in the direction of the arrow on the valve body. Partner valves (ASV-M/I/BD, MSV-F2) must be installed in the flow pipe, with flow in the

direction of the arrow on the valve body. The impulse tube must be installed between partner valve and ASV-P. The impulse tube must be flushed through before installation.

Pressure testing

Max. test pressure is 25 bar. When pressure testing the system you must secure that both sides of the membrane have the same static pressure to prevent damage of the pressure controller. That means the impulse tube must be connected and any needle valves must be open. If ASV-P is installed in combination with

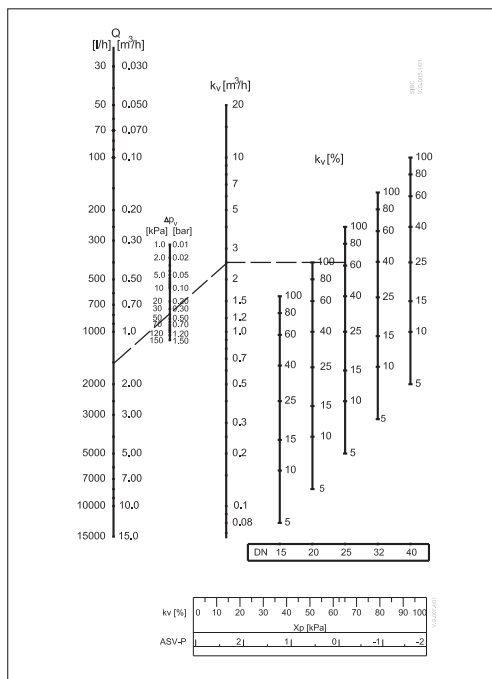
ASV-M both valves must be open or closed (both valves must be in the same position!). If ASV-P is installed in combination with ASV-I /ASV-BD both valves must be open. During this operation (closing or opening the valves) please make sure that there is never lower pressure on upper side of the membrane to prevent damaging it.

Starting

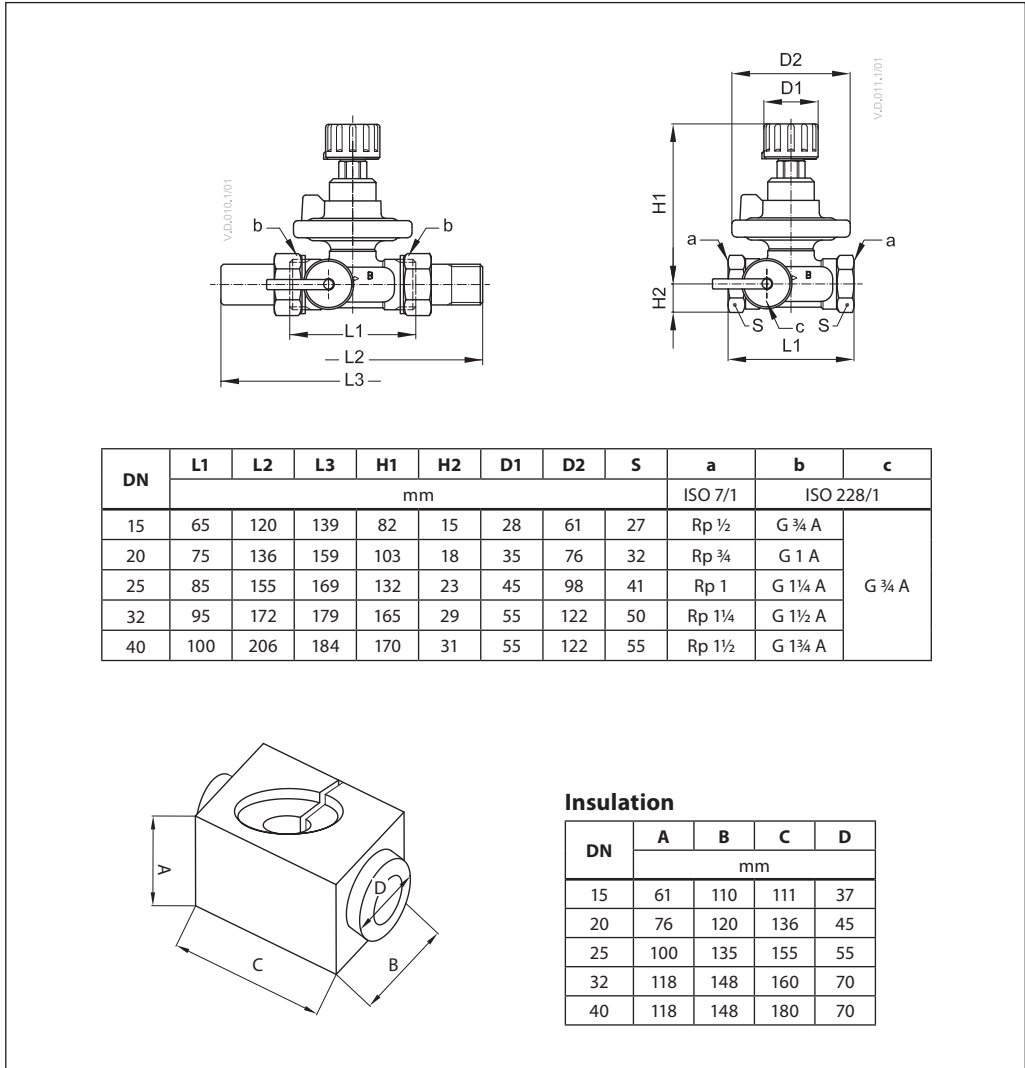
During system start – opening the shut-off on ASV and partner valve-please secure that there is the same static pressure on both sides or higher pressure on upper side of the membrane.

If filling is done by opening ASV-P and partner valve, please make sure there is a pressure on the upper side of the membrane by opening partner valve first before ASV-P is opened.

Appendix A-Sizing diagram



Dimensions



Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.